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Wildlife--Wild Death: Kenya's Man-Animal Equation

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WILD LIFE—WILD DEATH: KENYA's MAN-ANIMAL EQUATION

by Norman N. Miller

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Kenya's game laws, in comparison to those of ancient England, are tame and mild. Castration, amputation, blinding, or hanging were punishments for game infractions in William the Conqueror's time. To lift your fist to a gamekeeper in twelfth-century England was a gallows offense, and one of the key complaints leading to the political reforms of the Magna Carta in 1215 involved the oppressive game laws under King John. A violation of the game laws in Kenya today usually leads to a fine or a brief jail sentence.

Curiously, the core issues between the two worlds and across eight centuries are the same. Wild animal conservation—the heart of the matter—is an issue of class and caste. The rich want to conserve animals for aesthetics, sport, and leisure; the poor want to eat animals, or kill them before they destroy crops or herds.

The historic tragedy in Kenya is not the slaughter of so many animals in the colonial period, nor even the enormous number of animals lost to modern poaching. Most of the species could still rebuild their numbers. The tragedy is that African interests, particularly of peasant farmers, were not taken into account when formulating policies governing wildlife management. Herein lies the seed of wildlife destruction.

Ian Parker, whose family came to East Africa in 1903, is one of the clearest thinkers in Kenya on wildlife problems. In his early forties, graying, self-possessed, disarmingly frank, he is controversial because of his often brutal candor on wildlife issues. Parker argues:

Game laws have seldom worked. This is because they have so often been class-based and class-organized. It has always been the rich and privileged who want to preserve the game. In old England this conflict was an ongoing fact in the lives of peasants for at least a thousand years. Such laws have never worked because they were imposed on people who had a higher calling to break them. A hungry father trying to feed his starving children was always willing to risk extreme punishment by killing game. A man's position on the scale of plenty dictated his attitude toward wildlife. Conservation has always been a source of tension. It is such a simple fact of life it often escapes notice in the grand debates.

Will wildlife survive to awe and inspire visitors, or will the differences between rich and poor in Kenya ultimately lead to its decimation? The answer will be determined by the behavior of humans who live in proximity to game. What are the forces at work in this man-animal equation? The issues are complicated by differences in cultural values, in outlooks, in economic station, and in what the formal and informal wildlife "establishment" is trying to do.

Man versus Animal

There is no question that game depletion on a massive scale has occurred in East Africa, gaining momentum during wartime in the colonial era and reaching a crescendo in the 1970s. Traffic in ivory, rhino horn, spotted cat, monkey skins, and other trophies was a big business from which even the lowliest poacher could profit.

Historians will point to several reasons for the depletion: the demands of the international markets, the local wars like those in Uganda and on the Kenya-Somali border in which animals were killed by the score, and the relentless efficiency of game poachers, large and small. Still more basic to the problem is the human struggle to survive, to acquire and then to protect land, and to feed one's family. Thus the question of the survival of wildlife is intertwined with that of the human population.

Kenya's population in 1979 was increasing at 4 percent annually, the highest natural growth rate recorded in the world. This demographic explosion overshadows all other man-animal concerns, particularly in a country that has put aside 7 percent of its land for wildlife. The human tide is already spilling into areas considered unfit for settlement ten years ago.

The population growth creates a demand for land in areas set apart traditionally for game. Moreover, cultivation is extending into ecologically marginal zones where new farms encroach on game dispersal areas. Ultimately humans and animals conflict. Marauding animals destroying crops are shot or speared, particularly if the farmer is trying to get established and to "clear the area." High risk farming ventures are springing up in arid rangelands where farmers are willing to risk drought two or three years in the hope of one good crop. In these lands too, humans kill or displace the game.

The human tide is also pressing into the wildlife buffer zones, traditional dispersal areas that game move into and out of during wet season grazing. Game is protected in the dry season around Amboseli Lake for example; when the rains come the game migrates toward new grass on the plains and there confronts the farmers.

To attempt to prohibit these farmers from seeking their livelihood here, to keep them from killing game in their gardens is a very difficult undertaking. When a buffalo, rhino, baboon, hyena, or wild dog threatens a crop or a child, the community's consensus is to kill the animal. That a poor man can make a year's wage by killing a leopard or a lion, or five years' wages by killing a rhino, is a compelling economic force.

In Ian Parker's view, the rapid proliferation of Kenya's human population spells doom for the wildlife:

The density problem is at the core of the issue. If you increase the density of people, there is no possible way animals can survive, particularly if the people are poor and rural, which of course they are in Kenya. The population explosion is the main strand in the rope that is hanging wildlife, and the process can be predicted with some accuracy. Again, it involves the relationship between civic laws and game laws, the human population and the animal population....

As human density increases, laws will become more stringent. Population pressures will force rural people to break the laws more frequently, causing a great deal of social and political unrest, to the point the government will in all likelihood have to back down from greater enforcement. Kenya will never go to "castration, amputation, blinding and hanging" to maintain the game. At some point the system must crash. The animal population will decline so much the laws will becoming meaningless and thus will either be rescinded, revoked, or ignored. (Figure 1).

In essence, the human population growth will cause greater game regulations and restrictions for a time, but this will not protect the wildlife, and the animals will decline—in number, in species, in biomass, in density—however you want to measure it.

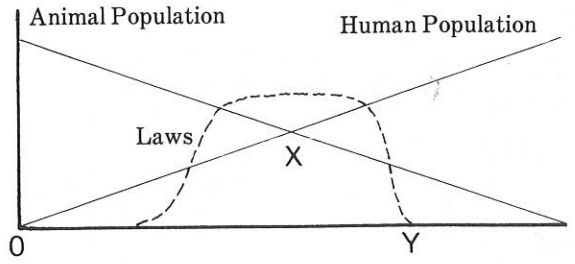
These are relentless pressures, involving human beings who are reacting to shortages and to hunger. Because none of the wildlife aficianados *ever consider the human populations, most palefaces [Europeans] are as far from understanding the rural poor here as anyone can be. Far from dealing with the people, or educating them about how game could be useful to them, they have done just the opposite. They have helped destroy the game by making it a paleface playground, a rich versus poor business. Do you know who the most disliked officials in Africa are? The game wardens. Just like old England. They are a detested group because they are the policemen for the rich.*

The Class Factor

Who benefits? The question of equity complicates the wildlife issue. The economic rationale that "game must pay its way" has been

Figure 1

Population and Regulation

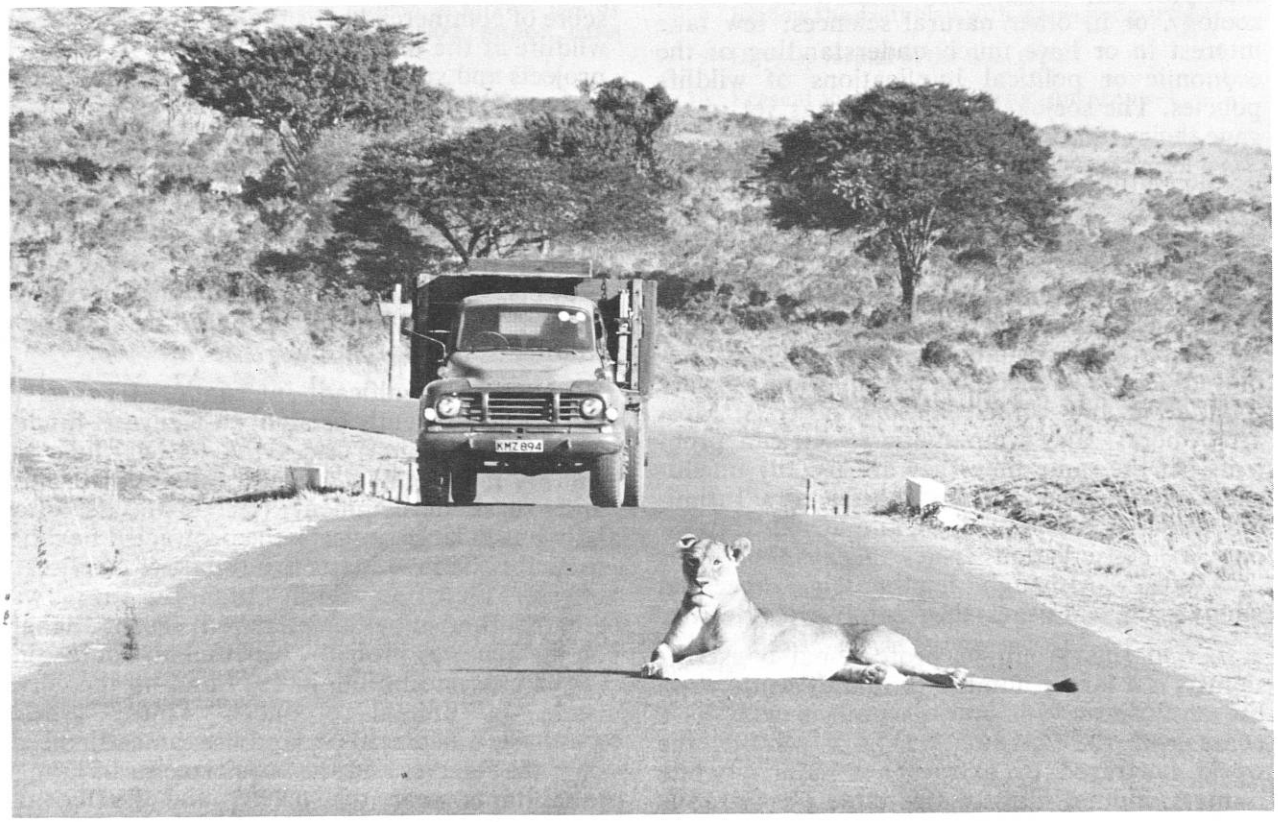


At "O," no laws, low human population, high animal population.
At "X," extensive laws, high human population, falling animal population.
At "Y," high human population, low or no animal population, no laws.

advanced as the great hope for saving wildlife. By balancing human and animal needs, wildlife can earn its keep. This, according to most ecologists, necessitates game cropping, particularly of zebra and buffalo, and a systematic method of paying the landowner on whose land the animal was shot. This practice would provide the landowner with income, make the animal valuable to him, give him an incentive to conserve wildlife, and bring some revenue to the government through licenses, taxes, and tourist revenues.

Attempts to persuade rural Kenyans of the great value of wildlife have been less than successful for several reasons. First, until recently, no one even proposed arrangements under which wildlife would have economic value for the Africans who live in close proximity to the large populations of game. The government's position that wildlife is "state property" creates dissent. Suggestions by international conservationists that Kenyans have "obligations to conserve wildlife as a 'heritage for mankind'," are simply irrelevant to the rural poor. Educational approaches and extension efforts that rest on a "you should, you must" argument fall on deaf ears.

Man versus animal in Kenya.



The formal attempt to introduce Western conservation values to Kenya in the 1970s is a documented failure. Karen Carlson's Ph.D. dissertation on the topic points out that wildlife values were used as a fulcrum whereby one culture tried to foist its values on another. Says Carlson, "The persuasion campaign [in Kenya] was based on the American hypothesis that appreciation of wildlife is dependent on the awareness and knowledge of the subject. Africans did not accept conservation because educational materials were not similar to traditional persuasional devices.... Exposure to wildlife as aesthetically valuable was not sufficient to change the attitude that wildlife was basically a source of food."[1]

It is important to be clear about these differences of perception. They are not particularly racial, although many conservationists in Kenya are white. Rather, African rural values are in conflict with a set of Western values which are alien, irrelevant, and contrary to the prevailing ethic of most African farmers. No synthesis between the two views has been achieved, or seriously attempted, one reason being the lack of sympathy by conservationists for the "human factor." Most wildlife officers, both in the colonial past and today, are trained in biology, zoology, or in other natural sciences; few take interest in or have much understanding of the economic or political implications of wildlife policies. The sociology of wildlife has yet to engage their attention and concern.

The culture conflict inherent in wildlife management is, however, complicated by the racial imbalance in the wildlife "establishment." While only a few whites remain in official government positions, the broader conservation movement is heavily influenced by whites, both Kenya citizens and expatriates. Many are professionals employed as researchers or veterinarians, or are foundation and United Nations officials. Most are "liberal" and sympathetic to African problems. At the same time they are usually uneducated about local African culture, shy, intimidated by African politicians, and afraid to speak out on conservation issues because of their "position." Although legitimately concerned about ecological issues, they simply avoid debate.

Behind this group of professional conservationists is a larger number of mainly white wildlife enthusiasts, amateur naturalists who have come from the "glamour" side of wildlife, the world portrayed by extravagant safaris, white hunters, animal films, coffee-table photography books—a world that attracts and spends a lot of money but that includes Africans only as bartenders and game scouts. Again, this group is not intentionally unsympathetic to African interests; they simply are not knowledgeable about or in contact with African problems as they appear on the ground. The twain rarely meet, and differences between the black peasants and the white middle and upper classes are exaggerated by the occasionally bizarre behavior of the rich.

The Wildlife Establishment

An array of governmental and nongovernmental, philanthropic and private organizations make up the wildlife establishment in Kenya. Excepting the Kenya government, many of the organizations are concerned with wildlife in the entire region, using Kenya as a base. Most of the organizations appear to operate independently. Informal links unquestionably exist, and there is cooperation on specific projects. "The establishment all know each other; they just don't like each other" is one official's view.

At the international level are the United Nations agencies, private foundations, and some bilateral organizations. The Kenya government, various nongovernmental organizations, and a score of commercial consultancy groups focus on wildlife at the national level. Dozens of research projects and special purpose programs are under way at the local level.

International Organizations working in wildlife include UN agencies and bilateral donor agencies, such as USAID and Canada's CIDA, plus a few foundations and international funds. Most of the funds are awarded for conservation projects, research, parks development, or to provide equipment for an antipoaching unit or a wildlife training program.

The most significant international conservation project recently brought to Kenya is funded by a $34 million World Bank (IBRD) loan for wildlife management in the context of land use and rural development (see box). As often happens in large projects, the protracted negotiations for the loan led to a number of "indirect" effects. First, a wildlife planning unit was created, funded by Canadian aid; second, debate on the loan was probably instrumental in leading to the ban on hunting in 1977 and on the curio trade in animal products. Third, greater emphasis was placed on land use, on cattle needs near the reserves and the requirements of human inhabitants near the parks; and finally, the

Wildlife Planning Unit

Kenya's Wildlife Planning Unit is unique in Africa. Most of its research and planning activities are specific to a given reserve or park, and most deal with collecting data useful to policy planners. Internal road plans inside parks, management plans, site plans, special studies, maps and economic projects are a part of the unit's output. "WPU" was established in 1977, first headed by Dr. David Western. It is currently headed by Dr. Gordon Davies of Canada. Initial funding was through the World Bank loan, but since 1979 it has been jointly funded through Canadian aid and the World Bank.

The unit's original mandate was to develop sound management plans for Amboseli, Maasai Mara, and Samburu Buffalo Springs. This was to include park management plans and a major road development plan. The involvement of the park wardens and their staffs was sought and a number of consultants contributed to the plans. Much of this work was finished in 1981 and the unit undertook its second mandate, to develop management plans for other areas.

Examples of work under way include aerial photography, photo mosaics, game enumeration, specifically in the Shimba Hills and Lake Bogoria areas, an ecological analysis of the Samburu and Mt. Meru Game Parks, and a study of a tourist center at the Malindi Marine Park. The average project is carried out by outside consultants and costs $10,000; project costs range from $360 to $25,000.

A number of problems plague the unit, some traceable simply to being new. Most staff feel that the original four-year program period is unrealistic, and that an eight-to-ten-year span would have been more appropriate. Because there is vast potential for developing the parks, the need to set priorities and by-pass other important work bothers the planners.

The unit is an integral part of the government, and its task in part is to train counterpart Kenyan professionals. There has been a shortage of qualified counterparts, and a shortage of expert wildlife planners with experience in East Africa. Lack of staff has delayed work in Tsavo East and Tsavo West, and in the Shimba Hills (a coastal park with rare sable antelope). Similarly, plans to open up wilderness areas for hiking, camping, and climbing (as opposed merely to sitting in vehicles to watch game) are moving slowly.

One of the key tasks before the unit for 1981-1982 is to develop a systems plan for the National Parks. WPU staff are approaching the problem in ten steps:

1. Review the background and objectives of the integrated national plan

2. Develop a detailed inventory of the existing components of the national system and the development of basic ecological typologies

3. Study the existing units

4. Consider deleting existing units

5. Consider adding new units and determine which units should be nominated for future development

6. Develop the overall system plan

7. Estimate priorities of development within the plan in terms of actual costs (finances and manpower)

8. Review the draft plan with interested parties

9. Develop format of the final report

10. Present the plan to the Kenya government

The seemingly rational step-by-step procedure is of course fraught with problems. The overall plan must incorporate the 50 existing parks, reserves, and sanctuaries, plus give consideration to new areas. Given the diversity of the ecosystems involved, the past difficulties some of the parks and reserves have presented, and the political pressures to drop some parks and add others, the undertaking is formidable.

Wildlife and the World Bank

In June 1977, the Kenyan government received a five-year $34,000,000 World Bank loan for wildlife. Its main elements include:

1. Funds for the development of three wildlife areas, Amboseli, Maasai Mara, and Samburu, including the development of roads, viewing tracks, entry gates, museums, staff houses and a park headquarters complex. The last includes dispensaries, primary schools, community centers, labor camps, and garages for park vehicles and road equipment.

2. Improvement of Lake Turkana National Park with demarcation boundaries of paleontological sites and the construction of a workshop, water supply, and exhibits for the museum, plus the provision of staff vehicles.

3. The provision of game-proof barriers, moats and fences, to be constructed near 5 game parks (300 miles of barriers initially planned).

4. A Wildlife and Fisheries Institute to be constructed at Lake Naivasha for specialized training of staff. Plans include classrooms, library, museum, student hostels, staff housing, vehicles, and equipment.

5. Assistance to Wildlife Club of Kenya, including three buses for transportation of Kenyan residents to the wildlife areas.

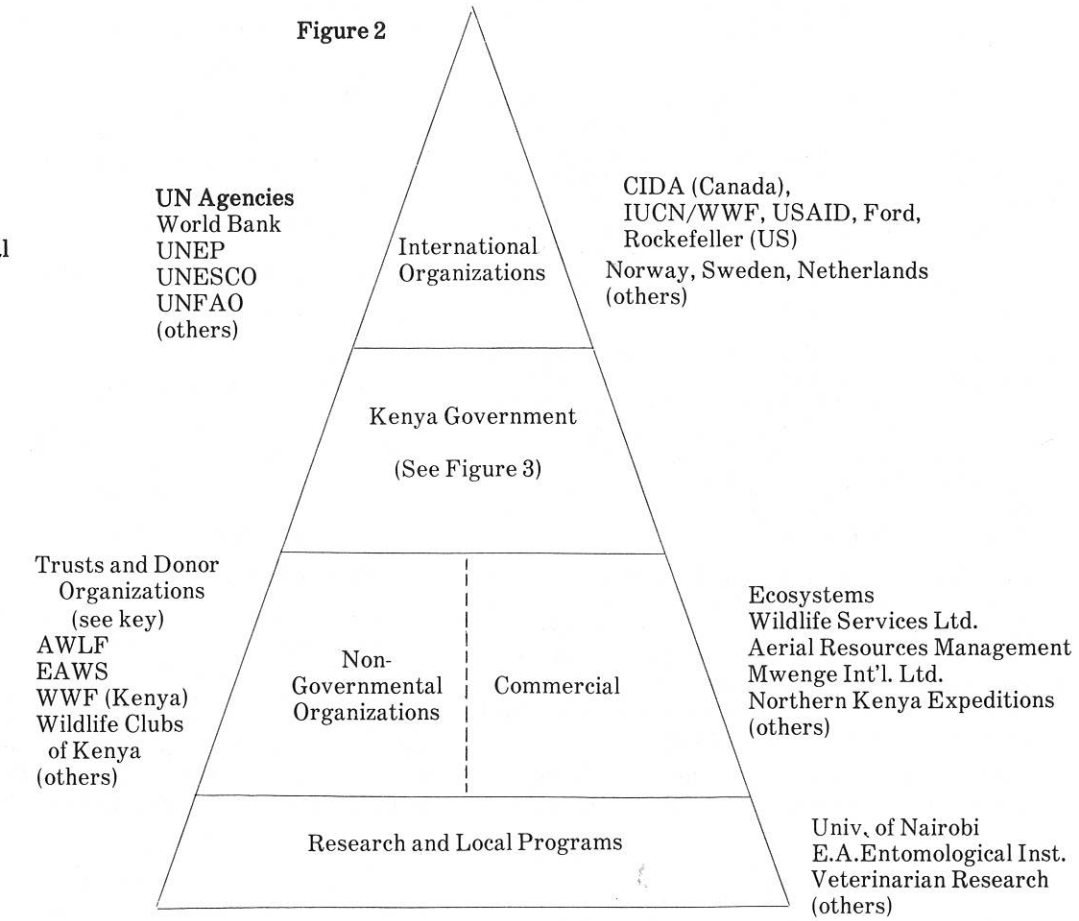
(cont'd.)

6. Establishment of a government Wildlife Planning Unit to provide detailed planning for each park and reserve, and to provide technical assistance to other agencies, particularly for staffing, equipment, and training.

7. Introduction of policy and feasibility studies for the management of large herbivores. Policy guidelines in the tourism-wildlife sectors were to be framed, as was the development of a tourist road linking Nairobi, Lake Magadi, and the Maasai Mara areas. Studies of the potential development of the Tana River, Garissa, and Lamu areas were to be initiated.

8. Assistance in antipoaching activities through equipment, staff, and other support.

Figure 2

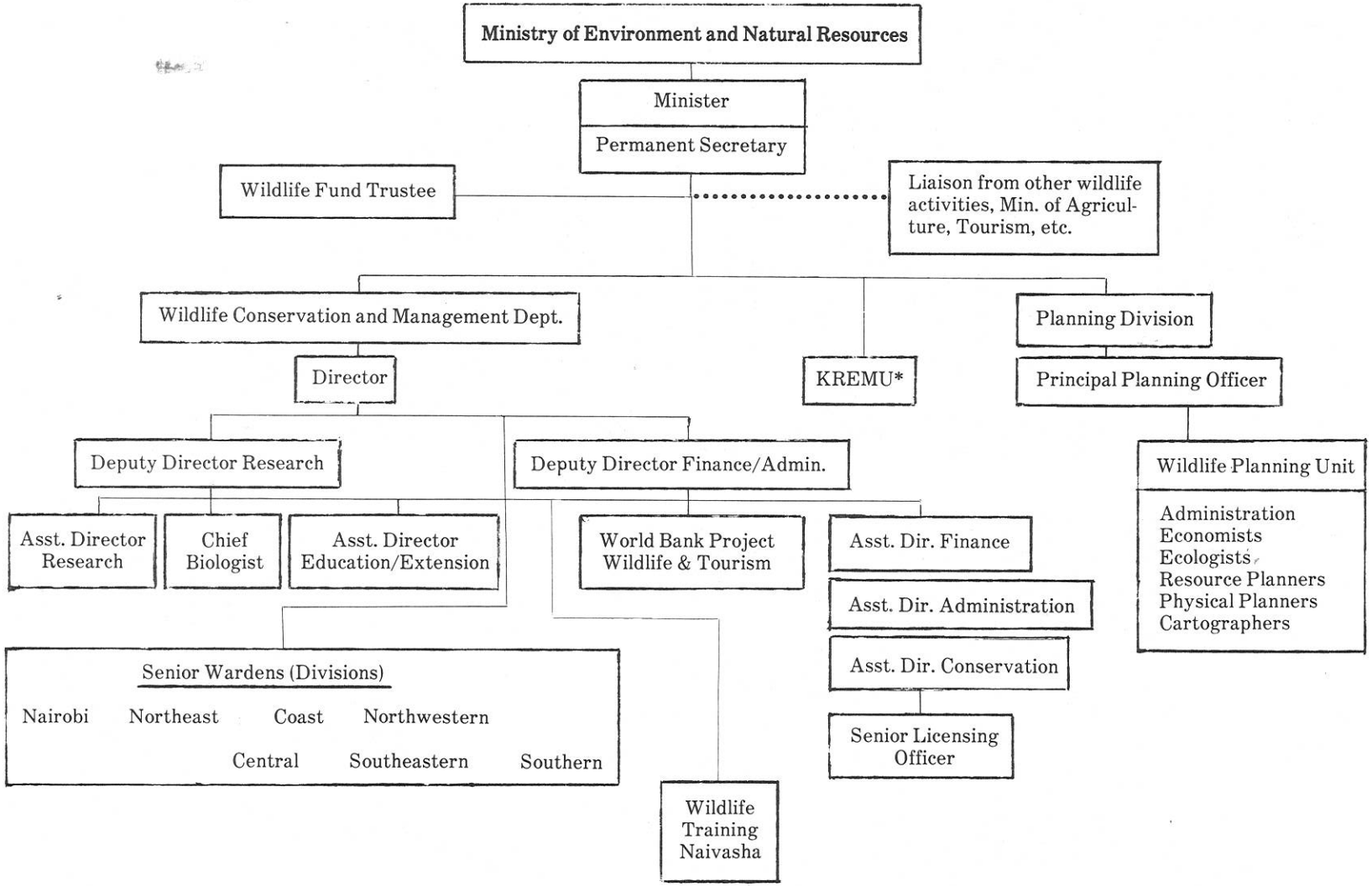


Key

Main Wildlife Donor Organizations (Nongovernmental)

East African Wildlife Society (Box 20110, Nairobi)
New York Zoological Society (Box 48177, Nairobi)
African Wildlife Leadership Foundation (Box 48177, Nairobi)
Sheldrick Memorial Appeal (Box 15555, Nairobi)
World Wildlife Fund (Kenya) (Box 24603, Nairobi)
Elsa Wild Animal Appeal (Box 40092, Nairobi)
Frankfurt Zoological Society
Eden Wildlife Trust Fund(U.K.)
Dulverton Trust
African Fund for Endangered Wildlife

Figure 3



*Kenya Rangeland Ecological Monitoring Unit.

Source: Wildlife Planning Unit, May 1981.

government has initiated a more rapid payback system to Maasai pastoralists for shifting grazing to areas outside parks. The Nairobi-based UN Environment Programme (UNEP), in collaboration with UNESCO, has also funded wildlife projects. UNEP helped produce the Global Wildlife Strategy in 1980 and, with UNESCO, sponsored Kenya's Integrated Project for Arid Lands (IPAL), a major project focusing on arid land ecology with important wildlife ramifications. The activities of Habitat, the UN Agency for Human Settlement, also headquartered in Nairobi, have important effects on communities living near wildlife. The World Wildlife Fund, working in cooperation with the International Union for the Conservation of Nature and Natural Resources (IUCN), has offices in Kenya. Other international foundations with officers in Kenya, such as Ford and Rockefeller, occasionally support wildlife projects along with other philanthropic and development work.

Kenya government wildlife programs are carried out mainly by the Wildlife Conservation and Management Department of the Ministry of Environment and Natural Resources. (The Ministry of Agriculture is charged with various veterinary projects, and the Ministry of Tourism, of course, is concerned with a number of wildlife issues.) Officers here are charged with maintaining the parks and reserves, providing education, research and extension activities and policy planning.

The major responsibility of the Wildlife Conservation and Management Department is the maintenance and development of Kenya's 33 parks and reserves, plus a few smaller sanctuaries. The size varies enormously. Tsavo National Park, for example, gazetted in 1947, contains 8,034 square miles, which makes it bigger than the state of Israel (7,393 sq. mi.) and Northern Ireland (5,407 sq. mi.). At the other extreme is Saiwa Swamp National Park at 192 hectares.

The 13 National Parks and 24 National Reserves represent over 7 percent of Kenya's total land area. Another 18 local sanctuaries have been created to protect unique flora and fauna.

The government's key problems are management and retention of trained personnel. Salaries are low, promotions slow in coming, cohesion lacking, and morale low. One well-trained wildlife specialist, a helicopter pilot in antipoaching work, resigned in mid-1981 not only because his salary was a fraction of what pilots usually get, but because he constantly encountered problems of obtaining fuel, spare parts, and adequate maintenance. He cited these terms of service as intolerable, even for a dedicated conservationist.

One way the government is addressing the management problem is through its Wildlife Planning Unit, an innovative approach begun in 1977, originally on funds provided by the World Bank and Canada. Its mission is long-term planning.

Non-Governmental Organizations in Kenya operate more or less autonomously, although they cooperate with government wildlife officers on specific projects. The NGOs are engaged in a wide range of activities including wildlife research and education. They provide scholarships, leadership training, equipment and vehicles for use in parks, and fund private philanthropic projects.

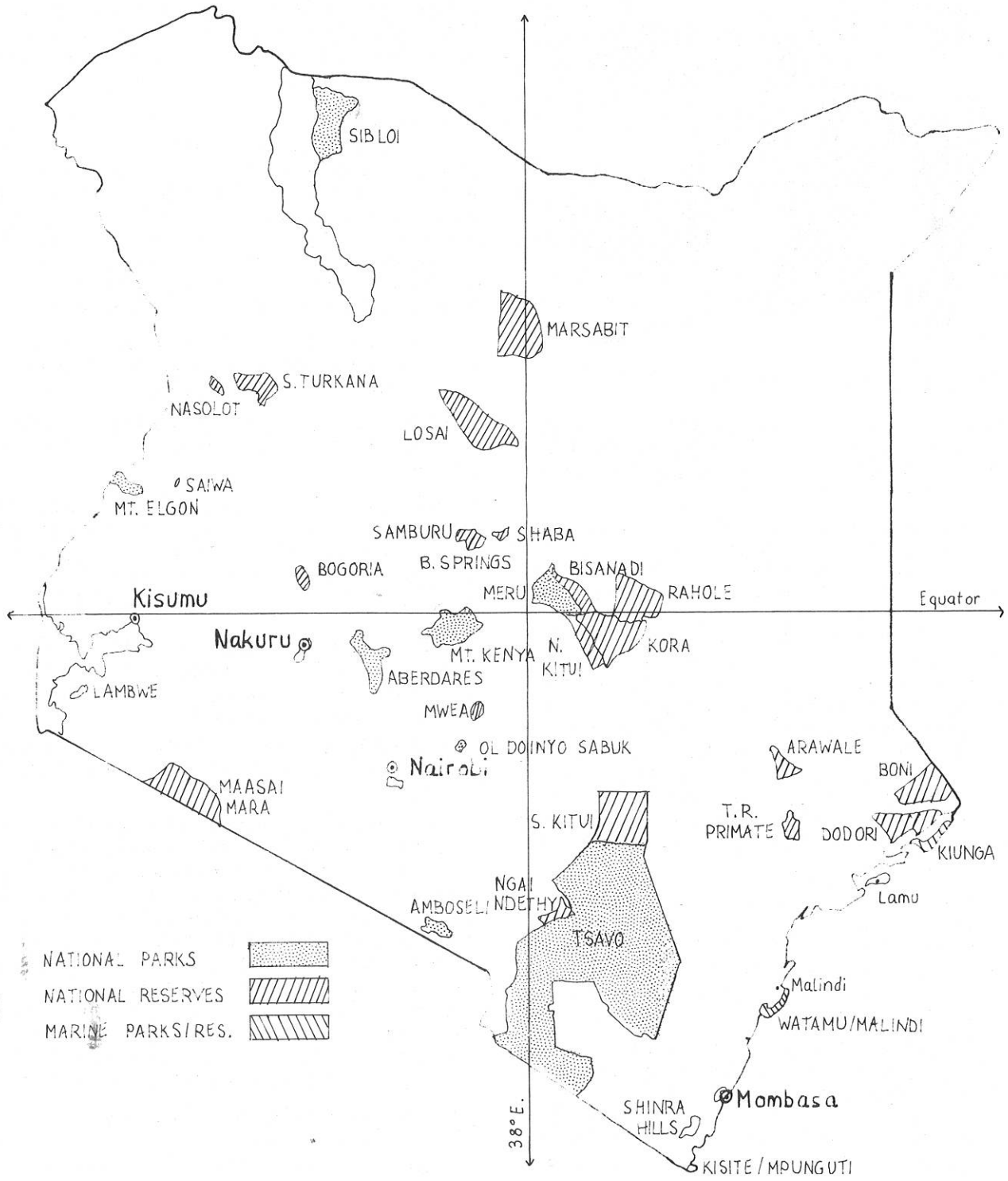
The African Wildlife Leadership Foundation (AWLF) serves as an administrative clearing house for funds, coming into Kenya from a number of sources, although it is pan-African in scope. It supports projects to select and train wildlife professionals, mainly through scholarship grants and study tours, and may handle equipment acquisitions for parks and reserves—trucks or an airplane for example—funded from abroad. It also helps manage research projects and produces educational materials, including a newsletter. With offices in Washington, D.C. and Nairobi, AWLF funds come from various philanthropic sources, mainly generated by its international board.

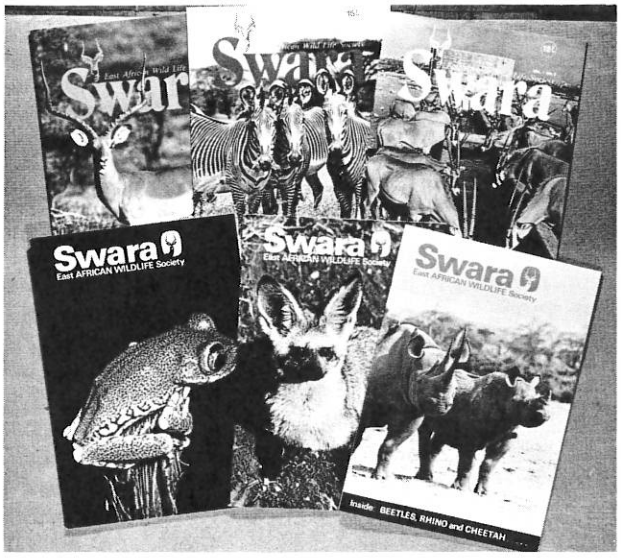
The East African Wildlife Society, founded in 1961 to safeguard wildlife and its habitat, publishes a major magazine, *Swara*. The society has supported research, supplied vehicles, planes, and other equipment to combat poaching, and served as a lobby for wildlife causes, largely in "private discussions at the highest level." The society has also supported work to save the endangered black and white rhinos.

Wildlife Clubs of Kenya is an educational youth-oriented organization with chapters throughout the country. Their primary function is to introduce wildlife topics to school-age children through a series of curricular projects, game-park visits, lectures, and other activities.

There are also various nongovernmental funds set up in Kenya, some broad-based, others to support specific research or work in a selected location. The New York Zoological Society, for example, supports the work of ecologist Dr.

KENYA NATIONAL PARKS & RESERVES





Swara, *magazine of the East African Wildlife Society.*

David Western; the Sheldrick Memorial Appeal, commemorating the work of David Sheldrick, late Park Warden of Tsavo East, partially focuses on that area.

Wildlife Consultancy Firms of several kinds operate at the national level, most of them commercial organizations that contract for research in technical areas such as aerial surveys and engage in other specialized work such as game cropping or game enumeration. Most are headed by professionals who are citizens or long-term residents of Kenya. Ian Parker's Wildlife Services, Ltd., for example, is basically a one-man operation that expands its staff as needed. Michael Rainey's Northern Kenya Expeditions Ltd., run by an American specialist on the Samburu area of northern Kenya, organizes "safaris" that provide a full range of educational services, including field trips and comprehensive ecological lectures.

Many consultancy operations have connections to larger firms overseas; some use Kenya as a base for work all over eastern Africa. Consultancy work may also include ecological surveying, land-use planning, policy planning, and various veterinary studies.

Local-Level Research, much of it done by expatriates, is characterized by an array of short-term programs and special purpose projects funded by overseas or Kenya-based sources. In a sense many of the international and national activities point to the project level, ranging from single-purpose studies often by candidates for advanced degrees, to more extensive research by teams studying a species or ecosystem. Some of the work is quite protracted, such as the primatology project in Amboseli near Mount Kilimanjaro, the longest study of its kind ever maintained in Kenya. Dozens of researchers are scattered throughout Kenya at any given time.

As in other sectors of the wildlife establishment, there is little integration of research efforts, and since 1972 there has been no systematic reporting of active projects. Part of this fragmentation comes from the fact that a researcher may be sponsored by any one of numerous organizations, may work inside or outside government, and may well disappear from Kenya when the research is finished.

A survey of 210 wildlife research projects initiated in East Africa between 1968 and 1981, reveals several interesting findings:

- The vast majority are zoological, either species-oriented or focused on a specific ecosystem.

- Research clusters around 7 main areas: (1) herbivores; (2) predators; (3) bird ecology; (4) land use and range ecosystems; (5) management and planning issues; (6) aerial survey and range monitoring results; and (7) wildlife disease and veterinarian research.

- Of the first 137 projects, up to 1972, only one, "The Utilization of Wildlife in East Africa," dealt with human ecological concerns. Overall, only 4 of 210 were so oriented.

- Of the 210 investigators listed, 7 were African (although several of the Europeans were Kenya citizens).

While the stated purpose of many projects is planning, and thus to help wildlife managers make rational policy decisions on specific parks and specific ecosystems, a problem consistently reported during compilation of this survey was the disjunct nature of the data. The compartmentalization of wildlife research frustrates planners and managers because of its site-specific applicability. Only a very few projects or dissertations even touch on the broad-ranging political, economic and educational issues that are the heart of Kenya's wildlife problems.[2]

The Informal Wildlife Establishment

To reconnoiter the informal establishment plunges one into a bizarre world of local intrigue

and vested economic interests. Strong sentiments prevail, vestiges of the colonial past persist, and a racial structure survives through which an inordinate number of Europeans outside government influence wildlife policy. Wildlife work remains a glamorous occupation and its participants fascinating.

In Kenya the group is made up of practitioners—zoologists, ecologists, veterinarians, conservationists, wildlife educators, government

Historic Sweep

We shot 52 lions today... perhaps overdoing it a bit.

(Hunter's diary, 1928)

Are events today part of the final demise of the great game herds, or are we seeing just another joust between man and animal? Considering that this tournament has gone on here for countless millennia, a few decades is only a twinkling of time. Or have these decades made a crucial difference? The past 150 years give us some clues. Man-animal relations have gone from relative coexistence, where Africans hunted for food and bartered locally, to a gradual expansion in trade and thereafter, in the early nineteenth century, to the rapid development of the "blood ivory" trade wherein huge profits were made and human slavery was imposed to carry tusks from the hinterland to the sea. After 1900, in the early colonial period, European settlers were ambivalent about wildlife and constantly debated animal conservation versus the right to shoot. The need to protect farm crops was always cited as "for Kenya's progress."

During both World Wars game was shot in great numbers to feed troops and prisoners in the eastern African campaigns. The first national park in Kenya was established in 1946, followed shortly thereafter by a rise in tourism. Hunting and viewing safaris came to a crescendo after Kenya's independence in 1963, perhaps influenced by the "white hunter myth" advanced in books and films. Also coming to a crescendo in the 1970s were poaching and illicit trade, reaching a peak in 1977. The tide ebbed when the resource was so diminished that international indignation became embarrassingly shrill, and when sizable profits could be made elsewhere (the great coffee bonanza of 1977 was made possible by Brazil's enormous losses to frost).

Given the benefit of hindsight, one sees the gravest error was shortsightedness. After all this "development," local African interests were either ignored, misinterpreted, or pushed aside by the European wildlife fanciers. Although there were efforts made earlier, an organized conservation movement did not form until just prior to World War II when it was finally realized that game depletion was occurring at an alarming rate.

"Poachers didn't cause this problem; the British Colonial Government did!", according to Ellis Monks, Kenya Secretary of the World Wildlife Fund. As an example, Monks says, "The bulk of the rhino population was indiscriminately shot by settlers with the blessings and bravos of the British Empire.... It was for the greater good of establishing farms and planting crops."

By the end of the colonial period, in the early 1960s, Monk says, Kenyan officials were well aware that the rhino was endangered. Since then many more have been poached, but the major depletion occurred earlier. Monks admits that drought, changes in breeding patterns and of ground cover and habitat have also adversely affected the rhino, but insists that it was reduced to the endangered state by the long period of killing.

His estimate (which may or may not be accurate) is that there were perhaps 200,000 rhino in East Africa in 1860 and 30,000 in 1960. In short, there has been a reduction of 170,000 animals if the rhino bred to a single 1 to 1 replacement rate.

"The hue and cry about poachers working on the remnants of the great herd is hardly an accurate picture of the disappearing rhino," concludes Monks. "Blame the British in Kenya, as well as the modern African poacher."

1700-1800	Relative coexistence; small human population, large wildlife population characterizes game areas.
1770-1830	The Kamba were prominent
1830	Beginning of Arab slave trade into the interior; long-distance trade from Lake Victoria; rise of Kenyan ivory trade.
1880	Antislavery movements by the British; ivory trade curtailed.
1885	Beginning of colonial influence; no game restrictions, indiscriminate hunting and shooting.
1887	First game control laws in British East Africa (Ngorongoro area)
1896	First game reserves, licensed hunting, the Kenia Game Reserve.
1946	First national park in Kenya (a quasi-government organization with its own trustees, rangers) versus the game department.
1976	Merger of parks and game department (parks staff became civil servants).
1980	Separation of Wildlife and Tourism into two ministries.

officers, wardens and ex-wardens, and foundation officers—plus an array of writers, photographers, and other publicists. The informal establishment also has its illegal side: poachers, smugglers, illicit traders, and white-collar manipulators.

In terms of "occupations," a distinction can be made between scientific and nonscientific approaches. Establishment members can also be divided according to legal and extralegal activities. These four sectors are arbitrary and overlapping, and useful only for an approximate profile of the establishment (Figure 4).

The Legal Sector: A few of the occupations within the legal establishment need brief explanations in their African context.

Ecologists, professional scientists usually concerned with one or more species of animals and their relationship to their habits, may approach their subject through zoology, biology, or the other sciences. Most ecologists take "holistic, integrated" views of specific ecosystems, and try to reach scientifically valid conclusions about the various interrelations among flora and fauna within it. Such researchers in Kenya often range across species. Dr. Kes Hillman, currently studying rhinos, began her career with frogs. Other ecologists—Dr. David Western for instance, who studies Amboseli Park—may take a broad area approach and look at an ecosystem in depth.

Wildlife Veterinarians are usually concerned with the interaction of wildlife with domestic animals, particularly in the transmission of disease.

Rehabilitationists attempt to raise orphaned or wounded animals for eventual reintroduction to the wild. The late Joy Adamson's "Born Free" enterprises are classic examples, as is George Adamson's present work rehabilitating lions near Kora in north-eastern Kenya, and the Leslie-Melvilles' work with Rothschild giraffes.

Preservationists belong to a "purist" camp who contend that habitats and animal species should be left totally undisturbed, and that human use of the zone should be prohibited, a sort of "nature's way only" approach. In some debates they have been dubbed "Druids" for their near-religious attachment to "stones, hills and animals."

Conservationists, a broad category, share some preservationists' views on specific species, but would allow human interaction and human use and profit from the wilderness while managing and protecting vegetation and animals.

Publicists, because wildlife has a major tourist appeal, have been responsible for an enormous outpouring of picture books, popular accounts, novels and "my true story" literature. This is big business and ranges from purely photographic interpretations through "sentimental accounts," to literature aimed at more serious readers. Most writing in this camp is entertainment, some of which the scientists lament as inaccurate and silly.

The Extra-legal Sector: Although the poacher, smuggler, and illicit trader in wildlife products get the publicity, and indeed are the targets of the government antipoaching unit, there are also "white-collar crimes" that range from foundation and fund irregularities to licensing frauds. Ian Parker, the wildlife consultant, observed:

The wildlife movement here is shot full of misguided people. Some of the "education and conservation" groups are so monocular they have no idea what they are preaching, to whom they are preaching, and what messages are actually being received. Some of the fund and donation organizations are so mismanaged, the pennies from our aunties in Chicago and Surrey never arrive. The donation game is, of course, not all a ripoff, but there are enough shrewd, semilegal people in it to make it all questionable.

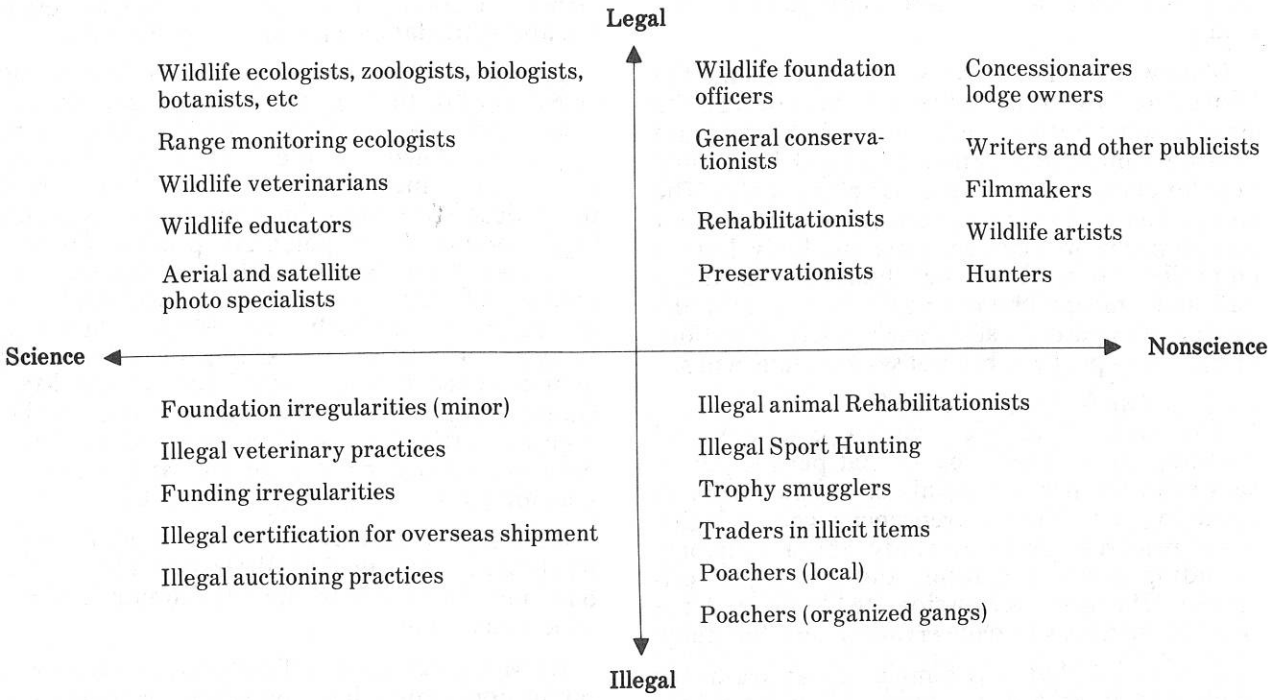
The following three cases are disguised to avoid embarrassing anyone, but all are based on fact. The problems seem to be not only fund mishandling, but also slips in logic and overpowering sentimentalism.

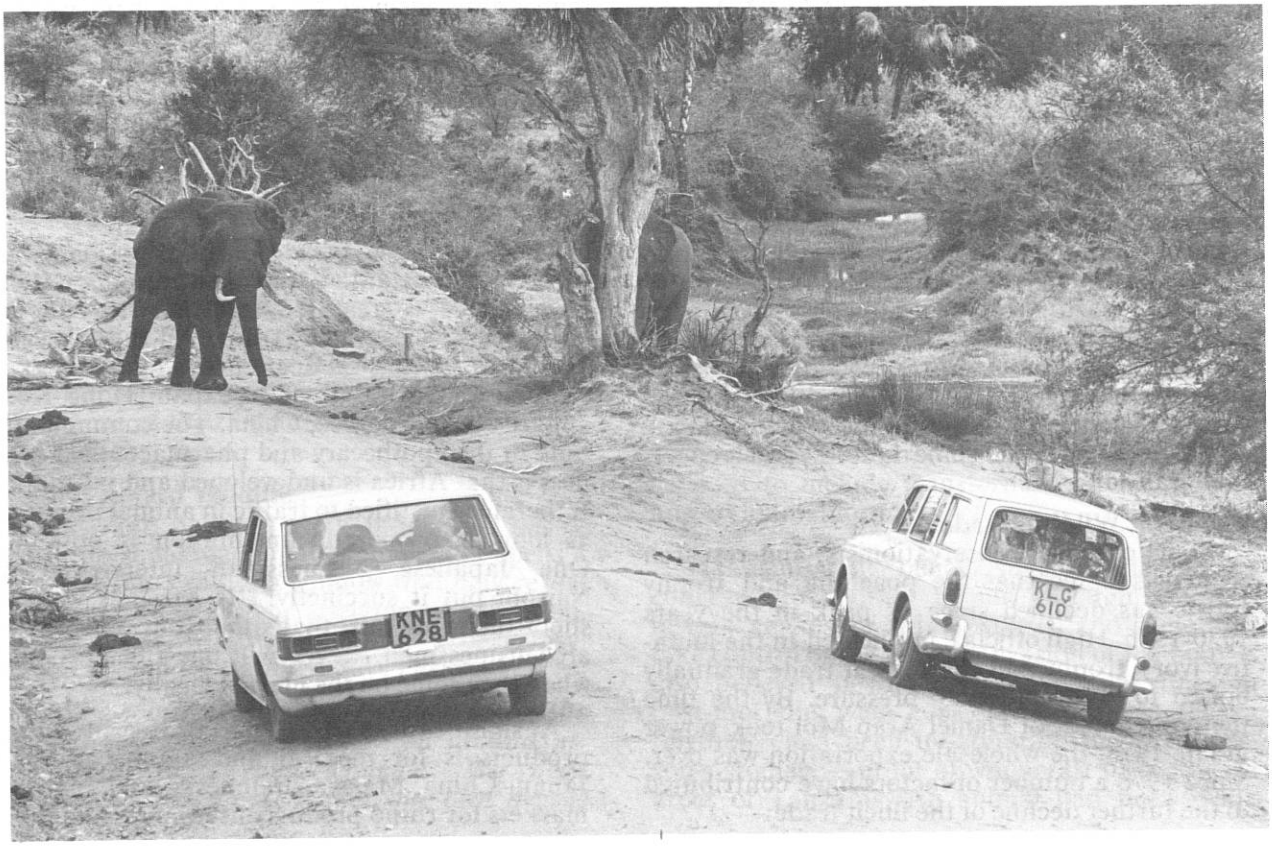
Case I: Turning Endangered Species into Ready Cash.

A European woman, call her Lady Jane, becomes enamored of an endangered animal, call it a wok, writes a book about woks, takes one for a pet, gets TV story rights for "Living with a Wok," makes money in the process and starts a "Save the Endangered Wok" fund. She aims the campaign at Americans and Europeans, presses her case in advertisements and direct mail, and does well: "Have a pet wok named after you; get its picture; get a report every six months on how your wok is doing; come to see your wok in sunny Kenya!"

Lady Jane donates $25,000 to the "movement" to relocate endangered woks to a safe place. After

Figure 4





Encounter by the Tsavo River, Tsavo West National Park.

two years the fund is down to $18,000, the woks have not been moved, and Lady Jane is distraught.

Meanwhile, the lawyers who represent the "Save the Wok" fund in the U.S. have tied up the sizable contribution made in the U.S., and are "eating" much of the money in legal fees, business lunches, and international phone calls. The Kenya-based lawyer suspects petty larceny, but has no proof or recourse. Amateur Lady Jane is embroiled in international finance and international "misunderstandings"; in the end, the project dissipates, Lady Jane's good intentions lining many pockets, but not saving many woks.

Case II: The Baby Zebra Fiddle

The laws of Kenya prohibit catching and trapping game, except by special permit. Overseas sales are permitted only of animals born in captivity. A wildlife entrepreneur gets a legitimate research grant to study zebra ethology, including grazing, mating, and rearing of offspring. He gets permission to herd a large number of zebras into observation pens for study.

It turns out that only female zebras are in the pens, and most are pregnant. All baby zebras born in the pens are legally salable, and the entrepreneur realizes a big profit from peddling them to the zoos of the world before the fiddle is brought to light.

Case III: Research Irregularities

Large animal studies need large grants, and one such grant for over $500,000 is made to a consulting group of well-established professionals. The start-up grant of $70,000 is deposited in the personal bank account of one of the senior partners. The group splits up in acrimony, and charges and countercharges fly back and forth. Legal moves to recover the grant are stymied, some by technicalities, others by the embarrassment of the granting organization—particularly because some studies and reports eventually appear.

The Illicit Wildlife Trade

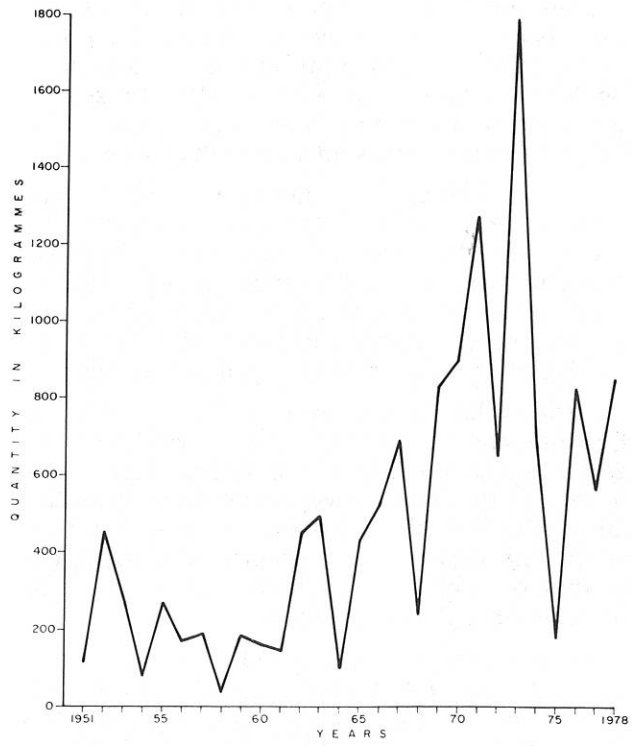
Game officials, conservationists, and research ecologists agree that the poaching and trophy traffic has declined since its peak in the years 1970-1976. High officials implicated in the lucrative ivory, trophy and spotted-cat trade gradually bowed to "international" pressure. By the time the government of Daniel Arap Moi took power in late 1978, the wholesale exportation was over. Since 1978 a number of factors have contributed to the further decline of the illicit trade:

- President Moi's anticorruption campaign has turned the spotlight on illicit government activities and made large-scale profiting difficult.
- Ivory poachers, particularly Somalis hunting in Kenya, are finding it difficult to get the elephant tusks out of Kenya. Antipoaching campaigns launched by the Kenya government, which have included deadly shoot-outs with sophisticated weapons, have made the risks very high compared to potential profits. (Several successes have been highly publicized. The killing of 22 Tanzanian "poachers" [or smugglers] in ambush near Maasai Mara by Kenyan authorities, the killing of a legendary Somali poacher called "Big Foot" in the Meru Game area, and the capture of other smaller groups, particularly in Tsavo East Game Park have gotten poachers' attention and tilted the poaching war toward the government.)
- Closing of the curio shops, far more than the hunting ban, also made a difference. The hunting ban has affected only the "legitimate killing," which was small.

As Moi government officials have pointed out, corruption, smuggling, and profiteering go on in the wildlife business. Still, reforms have worked to a degree. Part of the difficulty for the president is that Kenya is not an island; rather, it is at the center of regional and international illicit traffic. Much of the illegal booty is bound for markets in Europe, the Middle East, and many parts of Asia. Unquestionably, this traffic is the major economic factor in the decline of many species.

The international trade in rhino products and ivory is significant. Although some 70 nations have signed a treaty to restrain trade in endangered species (SITES), much of the conservation message falls on deaf ears among buyers of African animal products in Japan, Hong Kong and, to a lesser degree, China. The common attitude in the apothecary and pharmaceutical business is that Africa is undeveloped and inferior. It is therefore justified to traffic in animal products, as long as proper documentation is obtained. One Japanese businessman interviewed in Nairobi put it succinctly: "If Africans want to shoot their animals, that's their business.... We are businessmen.... We will buy their products when they come on the market legally."

A significant part of the traffic in animal products is for medical and apothecary uses. Japan, China, Malaya, Indonesia, and India are markets for rhino products used, for example, as



OFFICIAL IMPORTS OF RHINO HORN INTO JAPAN FROM 1951 TO 1978

fever repressants. Rhino fetuses, toes, stomachs, skin, and urine are also reported to be used.

Hong Kong and Japan import about 80 percent of the ivory on the world market; in Japan five traders take two-thirds of the national import.[3] Japan has signed the SITES treaty and buyers can import ivory under proper licenses, but buyers do not know or care if the export documentation has been falsely certified. They view "improper" documentation at the export end as none of their business. Buyers will not act as policemen.

Attitudes toward Wildlife

Ian Parker believes every individual has a private, personal reaction to animals that opens a window to one's mind, a window that may reveal feelings of awe or fear or affection or adoration. And for many, wildlife may serve a basic psychological need for stability. Says Parker:

Wildlife confirms our own lives and denies the destructive changes we perceive all around us. We fear society's rapid changes. We need benchmarks, reassurances that our own deaths are not imminent. Animals provide something of this. They are relics of the past that are still alive; and if they are bulldozed into oblivion, then our own existence is also threatened. When we get closer to the end of our string, we need reassurance about our own lives from wildlife. There is a symbolic reassurance in other living things, like a familiar landmark that convinces us we are still solid.

This search for continuity amid change that Parker sees as the vein running through the myriad mindsets that affect individuals' perceptions of wildlife. Each of these perspectives has, of course, been built up over a lifetime and each is underpinned by generations of similar attitudes. I have isolated, arbitrarily to be sure, eight groups that seem to me from many years of observation to present the spectrum of perspectives existing not only in Kenya but throughout Africa.

African Farmers. Agriculturists who live near wildlife areas are usually poor, smallholding cultivators who fear and disdain wildlife not only because wild animals destroy crops but because each year they kill and injure a great many people, particularly women and children. Each time a woman treks to a river for water or to a distant field to work, she runs the risk of encountering a dangerous animal; the community is constantly aware of danger.

Further, tradition provides within this community what might be called an iconography of fear whose images are animal forms, a powerful myth-based denigration of animals which are associated with supernatural powers, witchcraft, and illness. Clay figures and wood carvings of hideous animals are traditional teaching devices in some communities. A jackal, hyena, crococile, vulture, or other less-esteemed animal, according to this view, may be a witch in disguise, or be controlled by a witch, and witchcraft powers are believed to include transformation of a person into an animal form.

"Transmission" beliefs suggest evil can be conveyed to another person through animals, insects, snakes, or animal spirits, and some may take control of the person. Invasion of the body is also believed possible; blackened intestines in post-mortems were considered evidence that a "python" had been inhabitating the dead person's stomach—proof of witchcraft in Nyakyusa areas of Tanzania. An animal had been living

inside the person. Similar beliefs occur among other East African agriculturalists.

Indeed, people do disappear in rural Africa, and hyenas kill dozens of children annually in East Africa. Such an environment, in which myth and actual harm combine, fosters attitudes toward animals which are full of antagonism and disdain, a powerful anticonservation potion.[4] As lower forms of life, embodiments of evil, animals have no rights. (These attitudes contrast markedly with Westernized ideas of animals as "God's creatures," where to work with animals, like St. Francis of Assisi, brings one closer to God.)

Animal-based fears, like fears of illness and natural disaster, are part of the daily uncertainty of people in poor areas. Pressures to change traditional lifestyles for more "modern" approaches produce other uncertainties. For young people living in rural areas the changes can be traumatic, leading to what psychologists here have called "shattering," or "conversion." Changes occur faster than people can accommodate them, and attitudes toward wildlife are caught up in the changes. When a young peasant farmer begins to change to more modern systems, he must also change a set of attitudes toward himself and his habitat. Less accommodating and less symbiotic, he is now more able to brutalize his environment with, say, a second-hand shotgun or an ox-drawn plow.

The White Hunter. Since the turn of the century, the great herds have drawn Europeans to hunt as sport, an often expensive and very elaborate pastime. Many of these sportsmen and their local professional hunters' guides were a cross between hunter and conservationist, aware and appreciative of the bush. Others just wanted to shoot animals, the more the better. Perhaps some had a deep-seated desire to do combat with wild and dangerous beasts to test themselves, perhaps they were self-destructive. In the wilderness arena animals are good opponents. Man loses just often enough to underscore the danger.

African Gladiators. Among pastoralists contests with animals to prove bravery and manhood were standard practice. Maasai, for example, have always killed eland for ceremonial purposes; and Maasai who have goaded lions into charging and killed them with a spear continue to prize the manes they received as high-status headdresses. Elderly Boran herdsmen still wear the carved ivory armbands that signify their animal conquests. Today such practices have faded, perhaps as lions, elephants, and other dangerous animals have become less abundant. Ironically, these pastoralists were nudged from their traditionally symbiotic relationship with wildlife to supply zebra skins, wart hog tusks, and giraffe tails for profit to the curio shops while they were open.

Urbane Blacks. The standard cliché is that only two aspects of wildlife are of interest to educated Africans: the money-making business opportunities, and the chance to poke fun at weird Western behavior. The elite's views supposedly range from total lack of interest to ambivalence to curiosity and mild amusement.

Little of the cliché is accurate. Educated black Kenyans can in fact get very angry about the anomalies they see in the wildlife sector. They seriously question how well-to-do Europeans can fawn over wildlife when human needs are so great. The ability of the European sentimentalist to shut out people in favor of animals is, in an African view, great hypocrisy.

These eccentric white animal lovers are occasional themes for parodies by university thespians and for jokes at parties. The tourist's "Ain't it all *too* beautiful!" is ridiculed, as are tourist demands for quick service and patronizing attitudes toward African staff.

Many African wildlife officials are jaded, pessimistic, and see conflict in their roles. "Are we policemen for the rich?" they ask. Wildlife sentimentalism is an embarrassment to all sophisticated Africans; and the publicists, photographers, and filmmakers who make money producing saccharine celebrations of wildlife are particularly annoying to African game officers whose day-to-day work is underpaid and often thankless.

Colonial Ghosts. Kenya still has a sizable enclave of former colonial officers who elected to remain in Kenya to work or retire. Combined with other members of the settler community, these white elders reflect conservative, "better in the good old days" viewpoints. It is unfair to characterize their attitudes as racial; in fact, most old colonials are more tolerant and enlightened about African society than the present-day "two-year wonders" of the aid agencies.

They have, of course, blind spots concerning how good it was for wildlife in the past. There is little remembrance of the controversy that swirled about wildlife in the era of the British Raj. A quick way to start a very nasty argument

Wild animal orphanage. Its aims are to enable Africans to become familiar with different species of wild animals in their country, to protect them, and then study them. (courtesy UNESCO/R. Greenough).

in colonial Kenya was to suggest the settlers should conserve more game. To shoot it, to clear the farms, was for "the progress of Kenya." Ellis Monks, World Wildlife Fund Kenya secretary, unequivocally lays blame for the endangerment of the rhino on the colonist's doorstep: "Today's tragedy is just the final act...the extermination of a few thousand rhinos...in the greater execution of perhaps 170,000 such beasts over the last 100 years."

Another vestige of past colonial viewpoints is seen in the military mindset that once characterized the game department, particularly among old wardens and antipoaching officers. Much of the friction and mistrust of wardens is traceable to this military mindset whose answer to every problem from poaching to illegal grazing was force. Ardent conservationist Norman Myers notes that Kenyan authorities attempted to address this problem in the 1975 sessional policy paper:

The main point...is that Wildlife Service Officers must cease to be mainly policemen, telling landowners what they cannot do, and increasingly becoming their advisers....[5]

White Sentimentalists. Eccentric nature lovers can be found in any country, but Kenya has an abundance. There is a population of over 40,000 whites, or "Europeans," in Kenya, and room for a white wildlife minority to behave any way it likes. Kenya is a free country where bizarre, ludicrous behavior is tolerated—particularly if there is money to be made.

Sentimentalists produce much work that is condescending, paternalistic, or simply in bad taste, the "Born Free," "Daktari," "Daisy the Giraffe" portrayal. The enormously popular—in

the West—"Born Free" enterprise was, in fact, fraught with blatant exploitation and human tragedy. Joy Adamson was perhaps the most controversial figure in East African wildlife circles, and her use of wild animals undoubtedly the most lucrative. Before she was killed (apparently by an enraged former employee), her lion and leopard rehabilitation activities and those of her husband, George Adamson, had led to at least three human fatalities (African staff, whose deaths were kept very quiet). Several people including a European child and Terrance Adamson, George's 74-year-old brother, were mauled.

Nearly all professional wildlife people think the rehabilitation of wild animals, particularly of big cats, is a dangerous, unwise, and "unnatural" undertaking. It is particularly dangerous to Africans living within 50 miles of such activities. John Seago, one of Kenya's highly respected conservationists who once made a living capturing wild animals for zoos and scientific research, emphasizes the danger to all concerned when animals are reintroduced into the bush after being orphaned and raised by humans. "Insane, ludicrous, silly and very irresponsible towards nearby Africans," he mutters.

The Observers. Every year 300,000 visitors flood the game parks of East Africa. They spend a great deal of money just to be close to animals. Why do they come? Perhaps their motivation has aspects of sentimentalism, hero worship of Hollywood's white hunter, and the usual tourist search for the exotic. But it also must partake of that search for reassurance that Ian Parker has identified.

Seekers and Searchers. The mentality of those who research wildlife is often a mixture of scientific curiosity and a search for personal insight. Members of this group share the passivity of the Observers, but they spend years on their quests. Many are wildlife ecologists who are enamored of the outdoors and of learning about wildlife in great detail. They pursue their studies both as scientists and seekers after spiritual values. As George Schaller, the lion ethologist expresses it:

I cherished my escape from the organized lunacy of life in the city to elemental complexity of the wilderness. Yesterday, today and tomorrow became one as I lived for the moment, only seeking a sense of unity with the earth, the animal. As weeks and months passed I learned to recognize many of the lions and other predators. Ceasing to be mere animals, they became individuals about whose problems I worried and whose futures I anticipated. They became part of my memories of an austere, seemingly harsh land in which man seems of no consequence until he imperceptibly becomes a part of it. The life of isolation, of spending hours alone each day with animals was part reality, part illusion, and it suited me; it was neither a denial of life nor a retreat from those I love, but a way of sustaining a sense of spiritual independence. Solitude provokes reflection, and to study became a quest for understanding not just of the predators but also of myself, a personal corrida.[6]

Tourism, Terrorism, and Wildlife

Kenya's fickle tourist industry, which provides a strong economic reason for protecting wildlife, is vulnerable to major global forces such as high energy costs and world recession. Closer to home, it is vulnerable to acts of terrorism. To frighten away the tourists would be a death blow to wildlife; ironically wildlife provided a cover for armed aggression and crossborder banditry.

The Tanzanian-Kenya border is closed to commercial traffic, and therefore, a great deal of smuggling and illegal economic activity goes on there. The vast game areas, which unfortunately include the Serengeti and Mkoma reserves on the Tanzania side, and Maasai Mare, Amboseli, and Tsavo on the Kenya side, are the exact territory in which much of the illicit, occasionally violent traffic occurs.

In December 1980, on Kenya's southern border in the Maasai Mara game area, a major shoot-out occurred between Kenyan Army and Tanzanian "poachers and cattle rustlers," a culmination of months of sporadic poaching, robbing, cattle theft, and tourist harassment. Twenty-two Tanzanians were killed in an ambush 20 miles inside Kenyan territory. The incident was cloaked in political intrigue: four of the Tanzanians were in military uniform, and another was identified as a Tanzanian game warden well-known to Kenyan officials. The Tanzanian government apologized to Kenya for the intrusion, so that a "sisterly relation between the states" would not be strained.

Nor has occasional terrorism and unrest missed Kenya's northeast quadrant. Travel to the region between Lake Turkana and the Uganda border is hazardous, as starving, heavily armed

Karamajong people from Uganda maraud in search of food.[7]

The worst blow to tourism, however, was the Norfolk Hotel attack. The New Year's Eve 1980 bombing in Nairobi of Kenya's oldest, most celebrated safari hotel, with 15 killed and 80 injured, sent shock waves throughout the tourist industry. The attack was apparently a PLO-inspired vendetta against Kenya for allowing Israelis to land in Nairobi en route to the rescue at Entebbe. Whoever was behind the bombing, and whatever their purpose, it was clear their actions struck the jugular vein of the Kenya economy. The victims were mainly expatriates, a mixture of visitors and Europeans living in Nairobi, plus hotel staff. The bombing was deeply disturbing to President Moi's government and to the tourist establishment. As the cancellations poured into Kenyan hotels primed for the peak winter season, speculation was rampant that the fragile tourist industry could indeed be in for a bad patch. In fact, no further incidents occurred, and the winter season was eventually declared a "success."

Tourist revenues are the *raisin d'etre* behind protection of wild animals. Should that economic justification fail, enormous political pressures will mount to open the game areas for human settlement. Yet a collapse in the tourist industry could be provoked by any number of events, political upheaval, a border war, or continued terrorism.

There is also an increasing need to regulate, and occasionally police, the tourists. They must be "managed" to insure their maximum satisfaction, to turn a profit for Kenya, and to protect the game reserves. Issues here include road development versus habitat continuity, the depletion of ecologically important deadwood to provide fuel for evening campfires, occasional animal harassment, and the ever-present question, "How many visitors are too many?"

Tourism also competes with other enterprises for space and resources. The major viewing circuits in Kenya go from Nairobi to Amboseli and Tsavo in the south and east, from Maasai Mara to Nakuru in the southwest, and north to the Aberdares, Mt. Kenya and Samburu-Buffalo Springs Parks. Tourists on these routes initially travel already crowded Kenyan highways.

In the reserves the tourist is one of several kinds of people; in the same place are management-maintenance staffs for the lodges, park wardens and rangers, road maintenance crews, and the to and fro of supply van drivers. On the edge of the reserves may be dozens of Maasai or Samburu villages and their grazing cattle herds. As the human population builds, there is real danger that in some areas the combination of pastoralists, hawkers, management, and tourists will become too large even to resemble a wilderness experience. Eventually the messages carried by visitors out of Kenya will become less enthusiastic, and the free-traveling Europeans and North American tourists will begin to find new havens.

Policy

The Kenya government is obviously the key wildlife policy maker, although its members are sensitive to international pressures and local interests. Local interest groups, be they African farmers, professional hunters, conservationists, or one of the societies, work through their MPs and influential political contacts. Some of the current issues that vie for attention include:

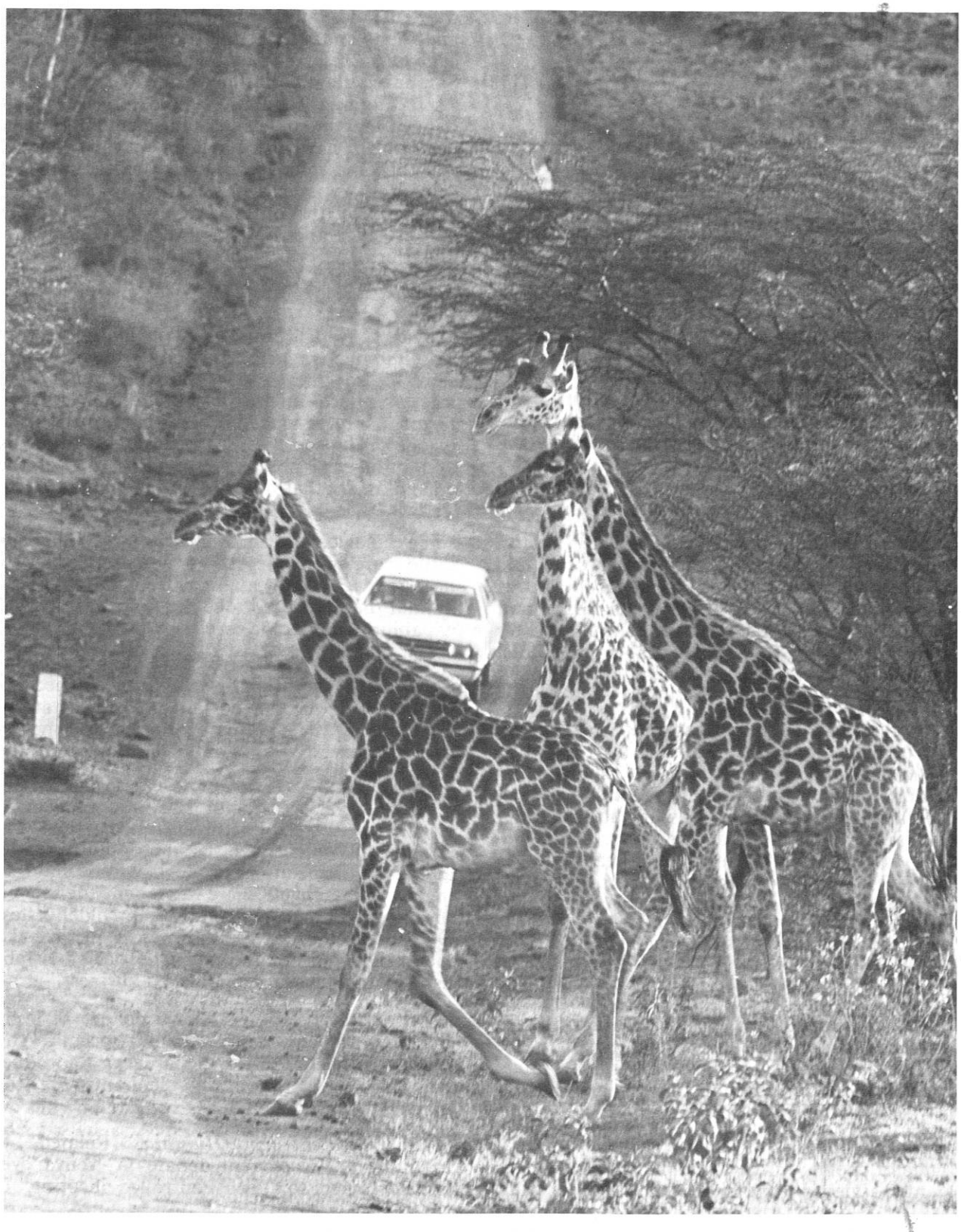
Degree of "Naturalness." Humans have had some ecological impact everywhere, and no one is quite sure what degree of "preservation" is necessary to sustain animal life in East African animal habitats. No one knows the survival capabilities of specific species in detail.

To Crop or Not to Crop. Will animal populations adjust "naturally" when resources become scarce? Will the carrying capacity of habitats be maintained over a period of time, or is it necessary to "harvest" (crop) animals to maintain the ecosystem?

Cropping is a difficult scientific maneuver. Even when there is agreement on the need, the physical difficulties involved in cropping animals and using their animal products can be staggering. In the Serengeti, there was lenghty debate on the need to cull 30,000-50,000 wildebeestes. Does one set up a canning factory to save the meat? Dig pits for the unusable parts? Establish holding pens? A complicated business.

For other species, is there a chance of overcropping? When does irreversibility occur? Who knows the animals' survival ability? Reproductive capacity? How many elephants are too many?

Reinstatement of Hunting. Related to cropping is the current debate in Kenya over whether or not to allow "controlled shooting" of



certain overabundant animals and birds, with the understanding that the landowner be the direct beneficiary (i.e., farmers be paid by hunters directly). Advocates argue the need to crop is compelling in some areas and that controlled hunting would allow the "resource" to be used. Opponents point out that "controlled hunting" promotes uncontrolled hunting, that licensing irregularities and other "fiddles" of the system become rampant when any hunting is allowed.

What is Endangered? Aside from a few clear cases—rhino, roan and sable antelope (in Kenya), greater kudu and dugong (in eastern Africa)—there is continuing debate about which species are actually endangered. Does "endangered" mean "not found in certain areas where it was formerly found?" In this case, crocodile, flamingo, leopard, cheetah, and a dozen other species are endangered. If it means "danger unto extinction," that is a different matter. Sounding the alarm over species that are thought to be endangered and then discovering they are breeding nearby in greater numbers, has been a problem. The old adage still applies: If conservationists cry "Wolf," too often...soon no one listens.

Size and Security. The vastness of Kenya, and the fact that thousands of square miles have been set aside for parks and reserves, makes effective management an impossibility. Borders are constantly breached, poaching and illegal killing are ongoing, and animals are constantly encroaching onto farmland causing serious crop losses. Game moats, dikes, fences, and other barriers are usually not very effective. How to protect game from outraged farmers is a serious problem—perhaps even an impossible one—in the more than 100,000 square miles of Kenya. Most wardens feel game priorities will have to be set for the animal populations and their habitats reduced.

Fencing the Future. Most officials feel wildlife will ultimately have to be separated physically from human populations using fences, moats, and barriers of various kinds. Jack Barrah, former game warden and now a government officer in the Wildlife Management Department, has been experimenting with electric fencing and is enthusiastic about its chances for success. Its cost is high so far—$10,000 a kilometer for the 75-kilometer test fence. Further tests over an 18-month period in Meru and Aberdare Parks will give some indication of its real feasibility.

Research Priorities. Since a great deal of money pours into Kenya for wildlife research, there is unending debate on setting priorities, both at the national and local project levels. At the national level there is a need to understand the impact of tourism, to rethink such matters as wood campfires for tourists, new viewing roads, and the impact of petrol and diesel smells on animal behavior. At the local level, research is often needed in order to make policy decisions. Research priorities in the Maasai Mara Park, for example, were suggested by Dr. Joseph Popp, an American ecologist who worked there: (1) lion behavior; (2) the role of fire (grass and brush fires); (3) endangered species; (4) migratory patterns of several bird species; (5) elephants and range destruction and implications for grass and range management; (6) veterinary studies of animal physiology, pathology, and wildlife epidemiology, including work on anthrax; (7) land versus man issues, particularly the impact of the nearby Maasai group ranching schemes.

Maasai Group Ranches and Maasai County Councils. One of the ways Kenya hopes to protect its southern parks is through organized group ranches for the pastoral Maasai. It is a complicated scheme that restricts grazing to center group areas around the parks, but at the same time enables Maasai to participate more directly in revenue sharing from the park fees. The local Maasai County Councils at Narok and Kajiado are responsible for the scheme. The realities are that the Wildlife Division is plunged into the realpolitik of Maasai councils. The "who gets what, when, and how" is as fierce here as any place in the world. The government's interest lies in conserving the game, but this is only one of several interests of the free-wheeling Maasai politicians. How much pressure a central government ministry can apply, and how much must be left to local initiatives, is a delicate equation.

Land Use. Perhaps the thorniest issue overall is the debate over what constitutes the best use for Kenya's land. As Ian Parker and others point out, population pressures and the vagaries of rainfall undergird an inexorable process. As long as man needs more land to feed his progeny, only the limits of physical possibility, largely climate and soil, will deter expansion. Wildlife is expendable if the need is great enough. Land hunger is the essence of Kenya's recent history, and so is its phenomenal population growth. The average rural couple wants eight to ten children. They

have, on the average, 8.2 children. Decisions on the number of children are still based on expectation of a high mortality rate and on the need for security in old age. Although modern medicine has dramatically increased infant survival rates, it has not yet convinced rural families sufficiently to curtail fertility. The result is compelling pressure to use whatever land can be used to feed a large family. How a government or anyone else argues effectively against this pressure is *the policy issue* for Kenya.

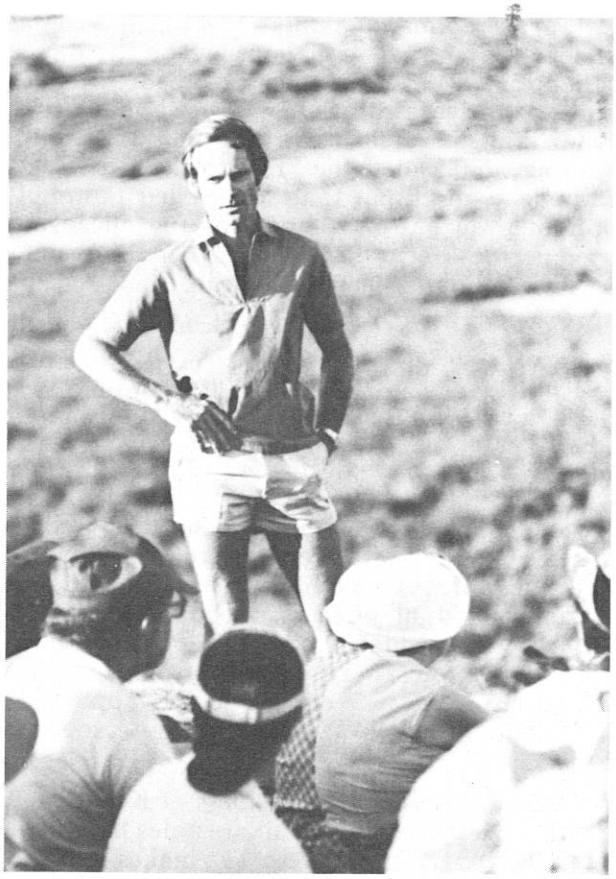
Amboseli Park: Model for Wildlife Management?

Given the range of policy problems in Kenya's wildlife sector, how has the "establishment" proceeded? The Wildlife Department is the key manager, but a lot of other forces come into policy-making; therefore, it is interesting to trace recent developments in a particular wildlife area. Amboseli National Park is perhaps the best example of how the many facets of research, government policy, and realpolitik come together on the ground.

Amboseli, in the shadow of Mt. Kilimanjaro on the southern border of Kenya, is a unique ecosystem that may well serve as the model for many parks in Kenya. Through the efforts of a Kenyan citizen, Dr. David Western, an integrated plan has evolved that protects the animals, gives the local Maasai compensation for lost grazing areas, and provides visitors with a superb wildlife experience. The story of how this particular park evolved is something of a wildlife saga.

Most of Amboseli Park is a dry lake bed, a geological remnant believed to have been the course of a major river that was dammed by the eruption of Mt. Kilimanjaro, forming a lake system with no outlet. Over perhaps three million years, the lake gradually evolved into a saline-alkaline basin. At the same time the mountain, towering above the lake, some 40 miles wide at its base, created a rain shadow. Moisture-laden clouds drifting into the 19,000-foot mountain dumped rain on its northern slopes. Most of this water trickled down the slopes and went underground, emerging in a series of swamps and upwellings in the Amboseli lake bed. The moisture permitted foliage and ground cover of great variety to grow—grasses, shrubs, woodlands, and particularly majestic fever trees thrived.

The stability of the water supply over time attracted an abundance of wildlife. Most were browsers whose migrations in and out of the swampy areas were dictated by the biannual rainy seasons and the availability of grass over the broader dispersal area. Early humans used Amboseli in the same way. Attracted by the water for their herds in the dry seasons, prehistoric man saw the swamps as a permanent lifeline, allowing him to range with his herds into more distant grasslands when the rains were plentiful, falling back to the edge of the swamps when they were not.



David Western lecturing to a Smithsonian Institution group at Amboseli Park.

The first European to explore the area, Joseph Thomson, reported a great abundance of game in the 1870s. One of the more intrepid early travelers, Thomson had been able to move through hostile Maasai by using guile and a gift of gab. His mainstay in difficult situations was to take out his false teeth, hold them aloft, and make them clatter. This so enthralled, or amused, the Maasai they allowed him safe passage. Thomson found the game more docile than any he had seen in Africa. Only elephants were

not abundant, apparently killed by Kamba ivory hunters from the north, or shot by Arab slave traders. Caravans were known to traverse the region, killing elephant and using captured slaves to carry the tusks to the coast.

The Maasai Thomson encountered had been in the Amboseli basin for 400-500 years, probably having migrated from the northern Rift Valley and displacing an earlier pastoral people known as the Olon. Little is known of the Olon, their origins, or their fortunes after being displaced by the Maasai.

Had not the Masaai themselves suffered a series of misfortunes beginning at the end of the nineteenth century, the modern political realities of the Amboseli Park area would undoubtedly have been far different. Beginning in 1899, a smallpox epidemic swept Maasailand, and close upon this an outbreak of rinderpest killed vast numbers of cattle. In 1911, to settle unrest among the decimated Maasai and to open land to European settlement, all Kenyan Maasai living north of the Mombasa-Nairobi railway line were moved south by the colonial government. Although a total backwater to European travelers, the life-giving Amboseli swamps became a population center for a new concentration of people.

It was not until after World War II that Amboseli began to receive a steady trickle of European visitors. Most came to shoot or to photograph the wildlife. By 1960 the park had been established, the local County Council had erected a few thatched cottages (*bandas*) for visitors, and a circuit track around the swamp had been established. The boom in tourism began and by 1965 was big business; lodges and tent camps were being constructed, and profits were becoming sizable.

Just as Amboseli tourism began to boom, however, things began to go badly for the Maasai in the early 1960s. The drought that began in 1961 was the worst in living memory; it wiped out up to 80 percent of the Maasai cattle and created widespread suffering.

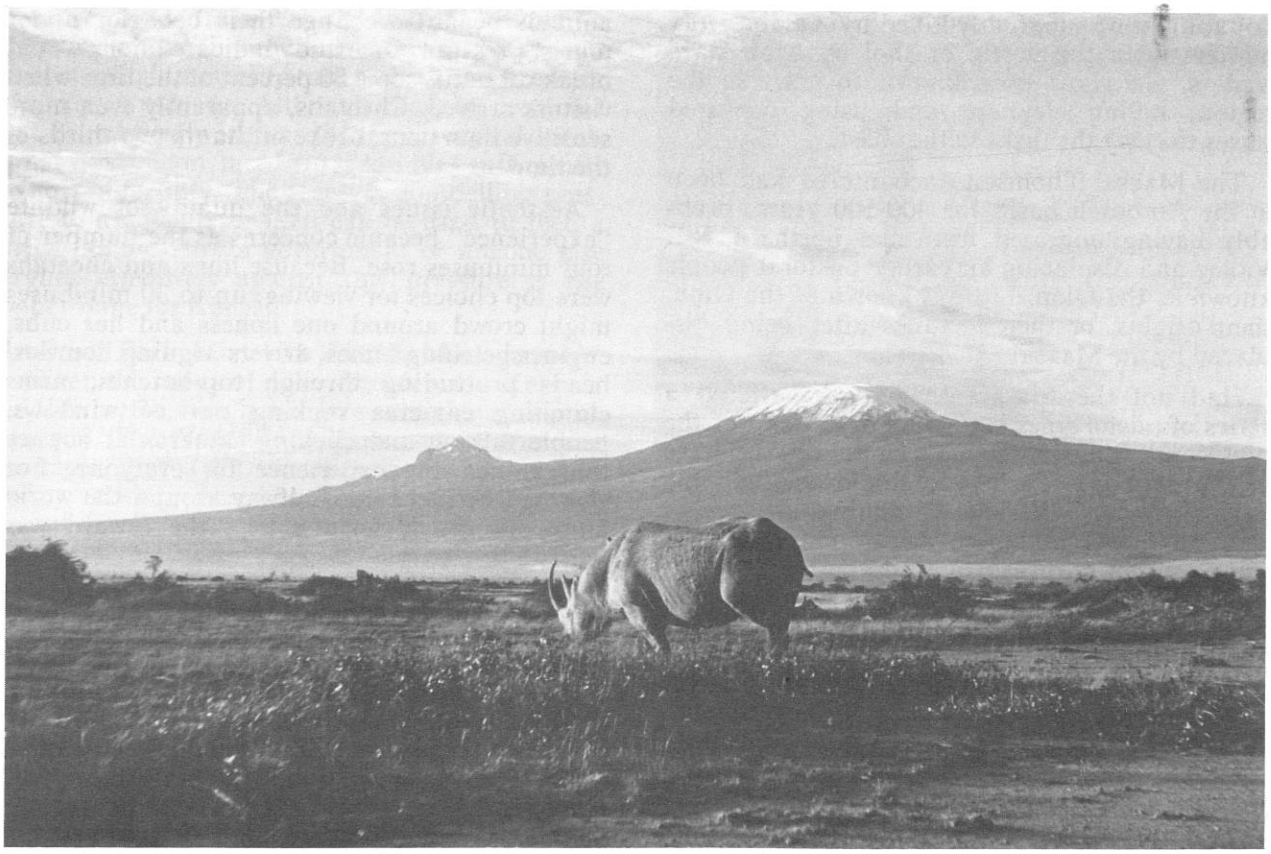
By the late 1960s the impact of tourism on the Amboseli ecosystem had surfaced as a major concern. The fragile grasses around the swamps were being destroyed by vehicles; dead wood, important to the habitat, was taken for travelers' campfires, and the omnipresent dust churned up by wheels was now a factor in both animal behavior and visitor comfort. Even more disturbing, animals began to change their behavior under tourist pressure. One study indicated lions would break off hunts some 50 percent of the time when visitors arrived. Cheetahs, apparently even more sensitive than lions, broke off hunts two-thirds of the time.

Aesthetic issues and the quality of wildlife "experience" became concerns as the number of tour minibuses rose. Because lions and cheetahs were top choices for viewing, up to 30 minibuses might crowd around one lioness and her cubs, engines belching fumes, drivers arguing, tourists' heads protruding through top-hatches, arms clutching cameras sticking out of windows, people talking and clicking cameras at a pace that ruined the experience for everyone. For visitors who had come halfway around the world and paid dearly for the trip, the reward was paltry.

"How many visitors are too many?" "What is the proper balace between land, animals, and humans (Maasai and visitors)?" Until David Western, and later his students, began probing these questions, there was only speculation. As permanent roads were built, as lodges and camps were dispersed and viewing points established, theoretically greater numbers could be accommodated. In the 1970s the numbers rose and fell with the world economy, peaking at 90,000 visitors one year to Amboseli, dropping in the late 1970s to 60,000, and then rising again. Visits in 1980 are reported to have been near 100,000; 1981 was running high as well, with bed occupancy at 87 percent in the park lodges.

Because the Kenyan government reaps sizable profits from the tourist industry (it is the second or third highest foreign exchange earner, after coffee and tea) there is pressure to add still more. Competing influences—visitor impact, government pressure, concern for the wildlife and habitat, and the wishes of local Maasai to use the water sources—seemed to bring matters to an impasse.

Complicating the picture was the rising concern for the woodlands surrounding the Amboseli swamps. The fever trees, important for their canopies of shade, were dying in great numbers. International conservationists became alarmed, and quickly blamed one of two culprits: the elephants which eat the bark of fever trees and occasionally bulldoze them, or the Maasai cattle which were thought to be overgrazing and disturbing the trees' root structures. Neither



Rhino near Mr. Kilimanjaro in Amboseli Park.

theory proved right, but the alarm heightened the difficulties of achieving a rational general park policy that would accommodate these many interests.

While research on fever trees proceeded, there was also research on what was becoming the "central defense" of the park—its economic value to Kenya. Government officials did not need to be convinced of the economic rationale, but the local Maasai did. This took David Western into the traditional world of Maasai cattlekeepers, who value their herds over other wealth. There was little doubt that if the local Maasai could share the revenue generated by Amboseli, they would be far wealthier. The economic comparisons were dramatic: Amboseli was shown to be worth about 85 cents an acre for cattle-raising: as a tourist attraction it was worth over 100 times as much, some $90 an acre.

Western argued that the local Maasai had never had the potential of wealth through wildlife explained to them. Maasai were traditionally indifferent to wildlife, seeing it as a "second herd," useful only in cases of emergency. The drought of 1890, for example, when cattle died in droves, led the Maasai to buy bows and arrows from neighboring hunters to live on game.[8]

Today, however, wildlife has fallen under government protection, essentially becoming "government cattle." Legally Maasai have no right to hunt, even during severe droughts. Since the parks are also government land, the Maasai have essentially lost access to both their "second herd" and to the grass and water to support their crucial "first herd." Some system of compensation had to be devised if Maasai were not simply to break the laws and illegally graze their cattle in the parks as well as poach for additional income.

In Kenya the local government system is structured around county councils in each of the 40 districts. Elected councillors serve in a grassroots political process, working in tandem with the political party and a permanent administrative staff at the council headquarters. The county council in Kajiado District, which includes

Amboseli National Reserve, earns 90 percent of its income from revenue generated by the park. It was the logical institution to oversee charges in the park management process, particularly if they dealt with some payback system. The seemingly straightforward procedure was fraught with difficulties.

Kajiado District is overwhelmingly Maasai. The problem for local Amboseli Maasai, however, is simply that Kajiado County Council is politically dominated by Maasai from the more populated north and northeast. The southern Amboseli area has a relatively small population, and thus little representation. Revenue generated because Amboseli Maasai were willing to sacrifice "cattle for wildlife" was returned to the district at large and not to people near the park. Through David Western's new plan, the Amboseli Maasai would get a larger share. Some powerful forces had to be enlisted.

It was fortunate that during the early 1970s Kenya and the World Bank were negotiating a $32,000,000 loan for rangeland development. The project, largely in Maasai areas, called for sweeping changes: new cattle dips, wells, boreholes, fences, veterinary services, a marketing scheme, and group ranching plans. Initial planning for the project had ignored the Maasai subsistence economy and made no mention of the wildlife. David Western and the Amboseli researchers asked for meetings with the bank officials, and some of the more compelling wildlife issues were put forward.

Using environmentalist Garrett Harden's idea of the "Tragedy of the Commons," Western argued that more wells, more fences, and more "development" would simply equal more cattle, as individuals quite naturally sought to accrue greater benefits to themselves. Each new cow would further deplete the resources of the common habitat, and thereby decrease everyone's true wealth. Since free-ranging game competes directly with cattle for grass and water, wildlife would have to decrease if cattle herds were to increase.

The Amboseli researchers pointed out that there were essentially two economic forces at work (or potentially at work) for the Maasai: cattle marketing and direct revenue from wildlife. This is where the "on-the-ground" reality had to be driven home.

Cattle marketing should have been profitable for the Amboseli Maasai, but many factors mitigated against it. Maasai cattle were not of high enough quality to be sold in competition with grade cattle; distances to market points necessitated long treks; markets were closed up to 50 percent of the time due to hoof and mouth disease. Government-controlled prices were generally low, and in any case revenue from range sales would never total more than 30 percent of what wildlife revenue could be.

The crux of Western's argument was that if the wildlife generated enough wealth for the local Maasai, the park could be protected from cattle grazing; outside the park cattle and wildlife could coexist. Local-level compensation had to be organized for Maasai who agreed to allow wildlife exclusive use of Amboseli swamps. The main stumbling block was finding a substitute water source for the cattle.

After further study, Western proposed that a 16-mile-long water pipeline originating in the Selengai area in the north, with water storage tanks dispersed along the way, would give the Maasai the wherewithal to shift much of their grazing north away from the Amboseli swamps. The World Bank accepted the proposal, funded the project, and within a few months the pipeline was installed.

Eventually, the Amoseli plan went into effect. The Maasai agreed to leave the park to wildlife, and to participate in a group ranch plan for the areas just outside the park that protected game dispersal areas and allowed Maasai grazing to continue.

The Amboseli Maasai are diversifying economically, some of the young men taking wage employment, some working for the lodges and parks services. Still others are selling beef in larger quantities, having broken the government monopoly (Kenya Meat Commission), now getting three to four times higher prices from independent buyers. A few Amboseli Maasai have becomed wealthy simply by crossing the border into Tanzania to buy cattle and sell them in Kenya's free market.

David Western and the ecologists who have worked with him believe an "integrated" approach to maintaining the park will work. The Maasai are being compensated, the government still gets a share of the tourist revenue, the park plans for improved roads and observation points are going ahead, and even the great fever tree mystery has been solved!

Western was able to prove that because of a rise in the water table, heavy alkaline/saline concentrations were brought up through the roots of

New Maasai, Old Maasai

Joseph Melompaki, age 29, is a finance clerk at Serena Lodge, one of four lodges in Amboseli National Park. As a lodge employee he maintains the financial accounts, receipts and records, and straightens out billing problems with suppliers, wholesalers, safari companies, and the international visitors. He is part of the lodge staff, expected to interact with visitors, answer questions about wildlife and nearby Maasai villages, and be a congenial host. This he does in a winsome, straightforward way, the same manner he uses when talking of his other life.

As a young "moran" (warrior) he led the charge of 17-year-old youths against a marauding male lion, was the first to dip his spear into the lion's blood, and won the coveted mane for a headdress. He is matter-of-fact about this, as the lion was killed in order to defend cattle and to prove his bravery and manhood. One senses the latter was more important. He, like so many Maasai, is ambivalent about wildlife.

He was considered bright and brave as a lad, was sent away to school and in eight years learned enough of the basics of math and English to qualify as a lodge employee. Since he was local, he fulfilled the management's policy to employ local labor. His normal accumulation of cattle for his own herd, however, has been foregone. His few cows, looked after by his brother, are still "owned" by his father. Following Maasai etiquette he must seek permission from his father to do anything that affects the cows, especially selling them.

In other ways Joseph's life is traditional. His wife of six years has born him two sons and a daughter. She lives with his family in a traditional *manyatta* some 25 miles away, which he visits every three or four months for several days. He occasionally brings her to the lodge for visits, but confides the atmosphere does not suit her, particularly with three children to care for.

Joseph says he does not mind the separation and is happy to have the security of a 800 shilling ($100) a month job plus the board and room that goes with it. He looks forward to a correspondence course that will upgrade his accounting skills, and hopes his "luck" holds so the company does not transfer him to one of their other lodges in another park. He would go if need be, he smiles, but would be sad to leave his family and his Amboseli homeland.

Joseph is active in the group ranch scheme that surrounds Amboseli. As a relative youngster, he is at the moment a participant. As he grows older (and wiser in finance), he will possibly gain greater responsibility, perhaps helping to bridge the two worlds of the wildlife visitors and the nearby cattle-keeping Maasai.

the fever trees. They were dying for lack of fresh water. The culprits were not the elephants or the Maasai cattle, as the international community believed. Moreover, the situation was not hopeless. Water tables in lakes and swamps all over East Africa had risen in the 1960s and 1970s. In all likelihood levels will subside, dropping out the heavy salinity and allowing the fast-growing fever trees to recover.

Outlook: Wild Life or Wild Death?

The ultimate question is—will the game herds survive, or is wildlife destined to be seen only in zoos and tiny preserves? No one knows the answers. Certainly enormous depletion has occurred, but except for rhino, large elephant, and a few other species, the pressures in the last three years have generally reduced. Whether specific habitats large enough for animals to breed effectively will be maintained will be the result of very intricate processes.

One can readily find evidence for either optimism or pessimism in assessing the future of wildlife in Kenya. As the sentimentalists prove, much depends on what you want to see. Wildlife is a magic glass; it reflects the eye of the beholder.

Extinctions are occurring, at the rate of one a year. The white rhino is so depleted that the minimum numbers for breeding purposes do not exist in many areas. On the other hand, the last of the big-time mass hunting safaris that killed indiscriminately have ended, at least in Kenya. The gin-soaked blood-lust, "we killed 52 lion today" episodes, are part of history.

Postindependence research has opened enormous vistas into the animal world, and as these insights flow into wildlife management circles, there is hope that policies will address the difficult issues. The fact that a small army of wildlife practitioners—scientists, lodgekeepers, tour leaders, and safari directors—have a stake in keeping the game alive augurs well for conservation.

There might also be hope in the democratic economic process. If the "people" had the resources at their disposal to do with as they saw fit, would they eat these geese, or keep them alive for their golden eggs? No one knows, because no one has really asked the rural African these questions.

The unfortunate truth remains that no synthesis between Western wildlife values and traditional African cultural values has been seriously tried. The experience in Amboseli suggests that such a synthesis is possible and will ultimately be more fruitful than imposing strictly Western wildlife values on African peoples.

(January 1982)

NOTES

1. Carlson, Karen, Ph.D. Dissertation, "The Kenya Wildlife Conservation Campaign" (Evanston, Ill.: Northwestern University Press), 1969.

2. Wildlife disease research is more integrated. A useful, partially annotated bibliography by Lars Karstad entitled *Infections, Parasites and Diseases of African Wild Animals* was produced in Kenya, as is a UNDP/FAO publication *Wildlife Disease Research: Kenya* (see Bibliography for both).

3. For elaboration on the international trade, particularly on rhino and elephant products, see the writings of Esmond Martin, particularly his detailed report available through the World Wildlife Fund, IUCN, 1196, Gland, Switzerland, entitled "The International Trade in Rhinoceros Products."

4. Animals are occasionally used as covers for human crimes. A scourge of assassinations discovered in Singida District, Tanzania, during the late 1940s and early 1950s, for some time baffled the colonial authorities. Killers disguised as lions slashed their victims to death with lion claws fashioned into gloves and left lion footprints. The murders were carried out by demented boys who had been "animalized" by "trainers" who took money to unleash their assassins, "murder for hire." Terror reigned in the district for months, people initially believing a lion plague was occurring.

5. "Statement on the Future of Wildlife Management Policy in Kenya," Sessional Paper No. 3, 1975, p. 8.

6. Schaller, G.B. and G.R. Lowther, "The Relevance of Carnivore Behavior to the Study of Early Hominids," *Southwestern Journal of Anthropology*, No. 25, 1969.

7. When open warfare occurs, as in the case of the Tanzania-Uganda war or the Somali-Ethiopia conflict in the Ogaden, wildlife would seemingly suffer from battlefield massacre. Apparently, in both bush wars this was not the case in the actual combat, but a phenomenon of boredom in the aftermath. The great game killings in Uganda's Murchison Park area were by troops who had nothing else to shoot.

8. Wildlife is also a more secure economic base. In the droughts of 1971-1975, Maasai lost 50-55 percent of the cattle. Only 7 percent of the wildlife in the same area perished.

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